

with each of the adjacent vertebral bodies, respectively, from within the disc space;

a leading end for insertion into the disc space and between the adjacent vertebral bodies;

1  
① a trailing end opposite said leading end, said trailing end having an exterior surface and an outer perimeter with an upper edge and a lower edge adapted to be oriented toward the adjacent vertebral bodies, respectively, said trailing end having a maximum height as measured from said upper edge to said lower edge along the longitudinal axis of the human spine, said maximum height being adapted to fit within the disc space and between the vertebral bodies adjacent to the disc space; and

a plurality of bone screw receiving holes in said trailing end, at least one of which is adapted to only partially circumferentially surround a trailing end of a bone screw adapted to be received therein, at least one of said bone screw receiving holes passing through said exterior surface and one of said edges so as to permit the trailing end of the bone screw to protrude beyond said one of said edges.

Sub 2  
① 4. (Twice amended) The implant of claim 1, wherein said implant has a height equal to the distance between the adjacent vertebral bodies of a surgically corrected disc space.

Sub 3  
① 19. (Amended) The implant of claim 18, wherein said bone growth promoting material is at least one of bone morphogenetic protein, hydroxyapatite, and genes coding for the production of bone.

Sub 4  
① 24. (Amended) The implant of claim 23, wherein said bone growth promoting material is at least one of bone morphogenetic protein, hydroxyapatite, and genes coding for the production of bone.

Sub E  
26. (Twice amended) A spinal implant for insertion at least in part across at least the height of a disc space between adjacent vertebral bodies of a human spine, said implant comprising:

opposed upper and lower surfaces adapted to be placed toward and in contact with one each of the adjacent vertebral bodies, respectively, from within the disc space;

a leading end for insertion between the adjacent vertebral bodies; and

D  
a trailing end opposite said leading end, said trailing end having an upper edge and a lower edge, said trailing end having a maximum height as measured from said upper edge to said lower edge along the longitudinal axis of the human spine, said maximum height being adapted to fit within the disc space and between the vertebral bodies adjacent to the disc space, said trailing end being adapted to only partially circumferentially surround the circumference of at least one bone screw adapted to be received therein.

Sub E  
D  
29. (Twice amended) The implant of claim 26, wherein said implant has a height equal to the distance between the adjacent vertebral bodies of a surgically corrected disc space.

Sub E  
D  
39. (Amended) The implant of claim 38, wherein said bone growth promoting material is at least one of bone morphogenetic protein, hydroxyapatite, and genes coding for the production of bone.

Sub E  
D  
42. (Amended) The implant of claim 41, wherein said bone growth promoting material is at least one of bone morphogenetic protein, hydroxyapatite, and genes coding for the production of bone.

Sub E  
D  
44. (Twice amended) A spinal implant for insertion at least in part across at least the height of a disc space between adjacent vertebral bodies of a human spine, said

implant comprising:

opposed upper and lower portions adapted to be placed toward and in contact with each one of the adjacent vertebral bodies, respectively, from within the disc space;

a leading end for insertion into the disc space and between the adjacent vertebral bodies; and

a trailing end opposite said leading end, said trailing end having an upper edge, a lower edge, and a maximum height as measured from said upper edge to said lower edge along the longitudinal axis of the human spine, said maximum height being adapted to fit within the disc space and between the vertebral bodies adjacent to the disc space, said trailing end being adapted to receive at least a portion of a bone screw passing therein that extends beyond said maximum height immediately adjacent thereto.

Sub 9  
D 10  
47. (Twice amended) The implant of claim 44, wherein said implant has a height equal to the distance between the adjacent vertebral bodies of a surgically corrected disc space.

Sub 11  
D  
57. (Amended) The implant of claim 56, wherein said bone growth promoting material is at least one of bone morphogenetic protein, hydroxyapatite, and genes coding for the production of bone.

Sub 12  
D  
60. (Amended) The implant of claim 59, wherein said bone growth promoting material is at least one of bone morphogenetic protein, hydroxyapatite, and genes coding for the production of bone.

Sub 13  
D  
62. (Twice amended) A spinal implant for insertion at least in part across at least the height of a disc space between adjacent vertebral bodies of a human spine, said implant comprising:

opposed upper and lower surfaces adapted to be placed toward and in contact with each one of the adjacent vertebral bodies, respectively, from within the disc space;

a leading end for insertion into the disc space and between the adjacent vertebral bodies; and

a trailing end opposite said leading end, said trailing end having a plurality of bone screw receiving holes, an upper edge, a lower edge, and a maximum height as measured from said upper edge to said lower edge along the longitudinal axis of the human spine, said maximum height being adapted to fit into the disc space and between the vertebral bodies adjacent to the disc space, said maximum height of said trailing end being adapted to be less than the sum of the maximum diameter of two bone screws adapted to be inserted in said bone screw receiving holes, said bone screw receiving holes being adapted to incompletely circumferentially receive at least one of the bone screws.

Sub 13  
D 14  
65. (Twice amended) The implant of claim 62, wherein said implant has a height equal to the distance between the adjacent vertebral bodies of a surgically corrected disc space.

Sub 15  
D  
76. (Amended) The implant of claim 75, wherein said bone growth promoting material is at least one of bone morphogenetic protein, hydroxyapatite, and genes coding for the production of bone.

Sub 16  
D  
79. (Amended) The implant of claim 62, wherein said bone growth promoting material is at least one of bone morphogenetic protein, hydroxyapatite, and genes coding for the production of bone.

Sub 17  
D  
81. (Twice amended) A spinal fusion implant for insertion at least in part across at least the height of a disc space between adjacent vertebral bodies of a human spine,

said implant comprising:

opposed upper and lower surfaces adapted to be placed toward and in contact with each of the opposed adjacent vertebral bodies, respectively, from within the disc space;

a leading end for insertion into the disc space and between the adjacent vertebral bodies;

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D a trailing end opposite said leading end, said trailing end having an exterior surface and an outer perimeter with an upper edge and a lower edge adapted to be oriented toward the adjacent vertebral bodies, respectively, said trailing end having a maximum height as measured from said upper edge to said lower edge along the longitudinal axis of the human spine, said maximum height being adapted to fit within the disc space and between the vertebral bodies adjacent to the disc space; and

a plurality of bone screw receiving holes in said trailing end, at least one of which is adapted to only partially circumferentially surround the trailing end of a bone screw adapted to be received therein, at least one of said screw receiving holes passing through said exterior surface and one of said edges so as to permit the bone screw to protrude over one of said edges within a plane of said trailing end; and

at least one bone screw, said screw having:

a leading end for placement in the vertebral body; and opposite,

a trailing end adapted to cooperatively engage said implant so as to prevent the further advancement of the screw into the bone and to be retained within said implant.

Sub E  
18  
D 84. (Twice amended) The implant of claim 81, wherein said implant has a height equal to the distance between the adjacent vertebral bodies of a surgically corrected disc space.

Sub E 19  
①  
95. (Amended) The implant of claim 94, wherein said bone growth promoting material is at least one of bone morphogenetic protein, hydroxyapatite, and genes coding for the production of bone.

Sub E 20  
①  
98. (Amended) The implant of claim 97, wherein said bone growth promoting material is at least one of bone morphogenetic protein, hydroxyapatite, and genes coding for the production of bone.

Sub E 21  
①  
100. (Twice amended) An interbody spinal implant for insertion at least in part across at least the height of a disc space between adjacent vertebral bodies of a human spine, said implant comprising:

opposed upper and lower surfaces adapted to be placed toward and in contact with each of the adjacent vertebral bodies, respectively, from within the disc space;

a leading end for insertion into the disc space between the adjacent vertebral bodies; and

a trailing end opposite said leading end, said trailing end having an exterior surface and an outer perimeter with an upper edge and a lower edge adapted to be oriented toward the adjacent vertebral bodies, respectively, said trailing end having a maximum height as measured from said upper edge to said lower edge along the longitudinal axis of the human spine, said maximum height being adapted to fit within the disc space and between the vertebral bodies adjacent to the disc space; said outer perimeter having at least one gap therein for permitting a portion of a bone screw to protrude over the outer perimeter of said trailing end within a plane of said trailing end, said gap being sufficient to retain a trailing end of the bone screw.

Sub E 22  
①  
103. (Twice amended) The implant of claim 100, wherein said implant has a height equal to the distance between the adjacent vertebral bodies of a surgically corrected

D22  
disc space.

Sub 23  
114. (Amended) The implant of claim 113, wherein said bone growth promoting material is at least one of bone morphogenetic protein, hydroxyapatite, and genes coding for the production of bone.

Sub 24  
117. (Amended) The implant of claim 116, wherein said bone growth promoting material is at least one of bone morphogenetic protein, hydroxyapatite, and genes coding for the production of bone.

Please add the following new claims:

Sub 25  
D25  
153. The implant of claim 1, in combination with a bone removal device for forming an implantation space at least in part between the adjacent vertebral bodies for receiving at least a portion of said implant.

154. The implant of claim 153, wherein said bone removal device is a milling instrument.

155. The implant of claim 153, in combination with an implant driver configured to insert said implant at least in part into the implantation space formed by said bone removal device.

156. The implant of claim 1, in combination with an instrument for forming a bone screw receiving hole into one of the vertebral bodies.

157. The implant of claim 156, wherein said instrument is one of an awl, a spike, and a drill.

158. The implant of claim 156, in combination with a guide having an end configured to cooperatively engage said trailing end of said implant to guide said instrument through one of said bone screw receiving holes of said implant.

159. The implant of claim 1, in combination with a screw driver configured to install at least one bone screw into said bone screw receiving holes and into the bone of a vertebral body.

160. The implant of claim 26, in combination with a bone removal device for forming an implantation space at least in part between the adjacent vertebral bodies for receiving at least a portion of said implant.

161. The implant of claim 160, wherein said bone removal device is a milling instrument.

162. The implant of claim 160, in combination with an implant driver configured to insert said implant at least in part into the implantation space formed by said bone removal device.

163. The implant of claim 26, in combination with an instrument for forming a bone screw receiving hole into one of the vertebral bodies.

164. The implant of claim 163, wherein said instrument is one of an awl, a spike, and a drill.

165. The implant of claim 163, in combination with a guide having an end configured to cooperatively engage said trailing end of said implant to guide said instrument through one of said bone screw receiving holes of said implant.

166. The implant of claim 26, in combination with a screw driver configured to install at least one bone screw into said bone screw receiving holes and into the bone of a vertebral body.

167. The implant of claim 44, in combination with a bone removal device for forming an implantation space at least in part between the adjacent vertebral bodies for receiving at least a portion of said implant.



168. The implant of claim 167, wherein said bone removal device is a milling instrument.

169. The implant of claim 167, in combination with an implant driver configured to insert said implant at least in part into the implantation space formed by said bone removal device.

170. The implant of claim 44, in combination with an instrument for forming a bone screw receiving hole into one of the vertebral bodies.

171. The implant of claim 170, wherein said instrument is one of an awl, a spike, and a drill.

172. The implant of claim 170, in combination with a guide having an end configured to cooperatively engage said trailing end of said implant to guide said instrument through one of said bone screw receiving holes of said implant.

173. The implant of claim 44, in combination with a screw driver configured to install at least one bone screw into said bone screw receiving holes and into the bone of a vertebral body.

174. The implant of claim 62, in combination with a bone removal device for forming an implantation space at least in part between the adjacent vertebral bodies for receiving at least a portion of said implant.

175. The implant of claim 174, wherein said bone removal device is a milling instrument.

176. The implant of claim 174, in combination with an implant driver configured to insert said implant at least in part into the implantation space formed by said bone removal device.

177. The implant of claim 62, in combination with an instrument for forming a bone screw receiving hole into one of the vertebral bodies.

178. The implant of claim 177, wherein said instrument is one of an awl, a spike, and a drill.

179. The implant of claim 177, in combination with a guide having an end configured to cooperatively engage said trailing end of said implant to guide said instrument through one of said bone screw receiving holes of said implant.

180. The implant of claim 62, in combination with a screw driver configured to install at least one bone screw into said bone screw receiving holes and into the bone of a vertebral body.

181. The implant of claim 81, in combination with a bone removal device for forming an implantation space at least in part between the adjacent vertebral bodies for receiving at least a portion of said implant.

182. The implant of claim 181, wherein said bone removal device is a milling instrument.

183. The implant of claim 181, in combination with an implant driver configured to insert said implant at least in part into the implantation space formed by said bone removal device.

184. The implant of claim 81, in combination with an instrument for forming a bone screw receiving hole into one of the vertebral bodies.

185. The implant of claim 184, wherein said instrument is one of an awl, a spike, and a drill.

186. The implant of claim 184, in combination with a guide having an end configured to cooperatively engage said trailing end of said implant to guide said instrument through one of said bone screw receiving holes of said implant.

187. The implant of claim 81, in combination with a screw driver configured to install at least one bone screw into said bone screw receiving holes and into the bone of a vertebral body.

188. The implant of claim 100, in combination with a bone removal device for forming an implantation space at least in part between the adjacent vertebral bodies for receiving at least a portion of said implant.

189. The implant of claim 188, wherein said bone removal device is a milling instrument.

190. The implant of claim 188, in combination with an implant driver configured to insert said implant at least in part into the implantation space formed by said bone removal device.

191. The implant of claim 100, in combination with an instrument for forming a bone screw receiving hole into one of the vertebral bodies.

192. The implant of claim 191, wherein said instrument is one of an awl, a spike, and a drill.

193. The implant of claim 191, in combination with a guide having an end configured to cooperatively engage said trailing end of said implant to guide said instrument through one of said bone screw receiving holes of said implant.

194. The implant of claim 100, in combination with a screw driver configured to install at least one bone screw into said bone screw receiving holes and into the bone of a vertebral body.--